

Elementary Education K–6

**Language Arts and Reading
Social Science**

**Music, Visual Arts, Physical Education, and Health
Science and Technology
Mathematics**

Section 60

Elementary Education K–6 Language Arts and Reading

1 Knowledge of the reading process

1. Identify the processes, skills, and phases of word recognition that lead to effective decoding (e.g., pre-alphabetic, partial-alphabetic, full-alphabetic, graphophonemic, morphemic).
2. Identify instructional methods for promoting the development of decoding and encoding skills.
3. Identify the components of reading fluency (e.g., accuracy, automaticity, rate, prosody).
4. Identify instructional methods (e.g., practice with high-frequency words, timed readings) for developing reading fluency.
5. Identify instructional methods and strategies for increasing vocabulary acquisition (e.g., word analysis, choice of words, context clues, multiple exposures) across the content areas.
6. Identify instructional methods and strategies (e.g., summarizing, self-monitoring, questioning, use of graphic and semantic organizers, think alouds, recognizing story structure) for facilitating students' reading comprehension.
7. Identify essential comprehension skills (e.g., main idea, supporting details and facts, author's purpose, fact and opinion, point of view, inference, conclusion).
8. Identify appropriate uses of multiple representations of information (e.g., charts, tables, graphs, pictures, print and nonprint media) for a variety of purposes.
9. Identify strategies (e.g., making connections and predictions, questioning, summarizing, question generating) for developing critical-thinking skills such as analysis, synthesis, and evaluation.
10. Identify instructional methods for teaching a variety of informational and literary text structures.
11. Identify the content of emergent literacy (e.g., oral language development, phonological awareness, alphabet knowledge, decoding, concepts of print, motivation, text structures, written language development).

2 Knowledge of literature and literary analysis

1. Identify characteristics and elements of a variety of literary genres (e.g., realistic fiction, fantasy, poetry, nonfiction).
2. Identify terminology and appropriate use of literary devices.

3. Identify and apply professional guidelines for selecting multicultural literature.
4. Identify appropriate techniques for encouraging students to respond to literature in a variety of ways.

3 Knowledge of the writing process and its applications

1. Demonstrate knowledge of the developmental stages of writing.
2. Demonstrate knowledge of the writing process (e.g., prewriting, drafting, revising, editing, publishing).
3. Identify characteristics of the modes of writing (e.g., narrative, descriptive, expository, persuasive, informative, creative).
4. Select the appropriate mode of writing for a variety of occasions, purposes, and audiences.
5. Identify elements and appropriate use of rubrics to assess writing.
6. Demonstrate knowledge of writing conventions (e.g., spelling, punctuation, capitalization, syntax, word usage).
7. Identify instructional methods for teaching writing conventions.

4 Knowledge of reading methods and assessment

1. Identify measurement concepts, characteristics, and uses of norm-referenced, criterion-referenced, and performance-based assessments.
2. Identify oral and written methods for assessing student progress (e.g., informal reading inventories, fluency checks, rubrics, running records, story retelling, portfolios).
3. Interpret assessment data (e.g., screening, progress monitoring, diagnostic) to guide instructional decisions.
4. Use individual student reading data to differentiate instruction.
5. Interpret students' formal and informal assessment results to inform students and parents or guardians.
6. Evaluate the appropriateness (e.g., curriculum alignment, freedom from bias) of assessment instruments and practices.
7. Identify appropriate classroom organizational formats (e.g., literature circles, small groups, individuals, workshops, reading centers, multiage groups) for specific instructional objectives.
8. Identify instructional methods for developing emergent literacy.

9. Identify methods for the diagnosis, prevention, and intervention of common emergent literacy difficulties.

5 Knowledge of communication

1. Demonstrate knowledge of penmanship (e.g., legibility, proper slant, spacing).
2. Demonstrate knowledge of listening and speaking strategies (e.g., questioning, paraphrasing, eye contact, voice, gestures).
3. Identify instructional methods for developing listening and speaking skills.

6 Knowledge of information and media literacy

1. Demonstrate knowledge of a wide array of informational and media literacy (e.g., Internet, printed material, artifacts, visual media, primary sources).
2. Demonstrate knowledge of systematic and ethical processes for collecting and presenting authentic information.
3. Identify current technology available for use in educational settings (e.g., computer software and hardware, Web tools).

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Social Science

7 Knowledge of time, continuity, and change (i.e., history)

1. Identify historical events that are related by cause and effect.
2. Evaluate examples of primary source documents for historical perspective.
3. Identify cultural contributions and technological developments of Africa; the Americas; Asia, including the Middle East; and Europe.
4. Relate physical and human geographic factors to major historical events and movements.
5. Identify significant historical leaders and events that have influenced Eastern and Western civilizations.
6. Identify the causes and consequences of exploration, settlement, and growth.
7. Identify individuals and events that have influenced economic, social, and political institutions in the United States.
8. Identify immigration and settlement patterns that have shaped the history of the United States.
9. Identify how various cultures contributed to the unique social, cultural, economic, and political features of Florida.

8 Knowledge of people, places, and environment (i.e., geography)

1. Identify the six essential elements of geography (i.e., the world in spatial terms, places and regions, physical systems, human systems, environment and society, uses of geography), including the specific terms for each element.
2. Interpret maps and other graphic representations, and identify tools and technologies to acquire, process, and report information from a spatial perspective.
3. Interpret statistics that show how places differ in their human and physical characteristics.
4. Identify ways in which people adapt to an environment through the production and use of clothing, food, and shelter.
5. Identify how tools and technological advances affect the environment.
6. Identify physical, cultural, economic, and political reasons for the movement of people in the world, nation, or state.

7. Identify how transportation and communication networks contribute to the level of economic development in different regions.
8. Compare and contrast major regions of the world.

9 Knowledge of government and the citizen (i.e., government and civics)

1. Identify the structure, functions, and purposes of government.
2. Demonstrate knowledge of the rights and responsibilities of a citizen in the world, nation, state, and community.
3. Identify major concepts of the U.S. Constitution and other historical documents.
4. Identify how the legislative, executive, and judicial branches share powers and responsibility.
5. Demonstrate knowledge of the U.S. electoral system and the election process.
6. Identify the structures and functions of U.S. federal, state, and local governments.
7. Identify the relationships between social, economic, and political rights and the historical documents that secure these rights.
8. Demonstrate knowledge of the processes of the U.S. legal system.
9. Identify the roles of the United States in international relations.

10 Knowledge of production, distribution, and consumption (i.e., economics)

1. Identify ways that limited resources affect the choices made by governments and individuals.
2. Compare and contrast the characteristics of different economic institutions (e.g., banks, credit unions, stock markets, the Federal Reserve).
3. Identify the role of markets from production through distribution to consumption.
4. Identify factors to consider when making consumer decisions.
5. Identify the economic interdependence between nations (e.g., trade, finance, movement of labor).
6. Identify human, natural, and capital resources and how these resources are used in the production of goods and services.

11 Knowledge of instruction and assessment of the social sciences

1. Identify appropriate resources for teaching social science concepts.
2. Identify appropriate assessment methods in teaching social science concepts.

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Music, Visual Arts, Physical Education, and Health

12 Knowledge of skills and techniques in music and visual arts

1. Identify appropriate varieties of music (e.g., age-appropriate range and vocal ability; diverse cultures, genres, and styles).
2. Identify developmentally appropriate singing techniques (e.g., posture, breath support, tone quality, vocal range).
3. Identify correct performance techniques for rhythmic and melodic classroom instruments (e.g., nonpitched percussion, recorder, autoharp, keyboard).
4. Read and interpret simple, traditional, and nontraditional music notation (e.g., melodic, rhythmic, harmonic).
5. Select safe and developmentally appropriate media, techniques, and tools to create both two-dimensional and three-dimensional works of art.
6. Identify appropriate uses of art materials and tools for developing basic processes and motor skills.

13 Knowledge of creation and communication in music and visual arts

1. Identify the elements of music (e.g., rhythm, melody, form, texture, timbre, dynamics) and ways they are used to express text, ideas, emotions, settings, time, and place.
2. Demonstrate knowledge of strategies for developing creative responses through music to ideas drawn from text, speech, movement, and visual images.
3. Demonstrate knowledge of strategies for developing creative responses through art to ideas drawn from text, music, speech, movement, and visual images.
4. Identify the elements of art and principles of design (e.g., line, color, shape, form, texture, balance, movement) and ways they are used to express text, ideas, meanings, and emotions.

14 Knowledge of cultural and historical connections in music and visual arts

1. Identify characteristics of style in musical selections.
2. Demonstrate knowledge of how music reflects particular cultures, historical periods, and places.
3. Identify characteristics of style in works of art.

4. Demonstrate knowledge of how visual arts reflect particular cultures, historical periods, and places.

15 Knowledge of aesthetic and critical analysis of music and visual arts

1. Identify strategies for developing students' analytical skills to evaluate musical performance.
2. Identify strategies for developing students' analytical skills to evaluate works of art.

16 Knowledge of appropriate assessment strategies in music and visual arts

1. Identify a variety of developmentally appropriate strategies and materials for assessing skills, techniques, creativity, and communication in music.
2. Identify a variety of developmentally appropriate strategies and materials for assessing skills, techniques, creativity, and communication in visual arts.

17 Knowledge of personal health and wellness

1. Demonstrate knowledge of the interrelatedness of physical activity, fitness, and health.
2. Demonstrate basic knowledge of nutrition and its role in promoting health.
3. Identify the processes of decision making and goal setting in promoting individual health and wellness.
4. Demonstrate knowledge of common health problems and risk behaviors associated with them.

18 Knowledge of physical, social, and emotional growth and development

1. Identify the principles of sequential progression of motor skill development.
2. Demonstrate knowledge of human growth and development and its relationship to physical, social, and emotional well-being.
3. Identify major factors associated with social and emotional health (e.g., communication skills, self-concept, fair play, conflict resolution, character development, stress management).
4. Identify problems associated with physical, social, and emotional health.
5. Identify factors related to responsible sexual behavior.

19 Knowledge of community health and safety issues

1. Identify factors contributing to substance use and abuse and identify signs, symptoms, effects, and strategies for the prevention of substance abuse.
2. Demonstrate knowledge of resources from home, school, and community that provide valid health information, products, and services.
3. Identify appropriate violence prevention strategies in the home, school, and community.
4. Identify appropriate injury prevention and safety strategies in the home, school, and community.

20 Knowledge of subject content and appropriate curriculum design

1. Distinguish between developmentally appropriate and inappropriate instructional practices that consider the interaction of cognitive, affective, and psychomotor domains.
2. Identify various factors (e.g., environment, equipment, facilities, space, safety, group diversity) to consider when planning physical activities.
3. Analyze the influence of culture, media, technology, and other factors when planning health and wellness instruction.

Elementary Education K–6

Science and Technology

21 Knowledge of the nature of matter

1. Identify the fundamental physical properties of matter (e.g., mass, volume).
2. Compare physical and chemical changes (e.g., cutting, burning, rusting).
3. Compare the characteristics of elements, compounds, and mixtures.
4. Compare the physical properties of solids, liquids, and gases (e.g., mass, volume, color, texture, hardness, temperature).
5. Compare the properties of liquids during phase change through heating and cooling (e.g., boiling, melting, freezing, evaporation, condensation).
6. Demonstrate knowledge that all matter is composed of parts too small to be seen (e.g., electrons, protons, neutrons).

22 Knowledge of forces, motion, and energy

1. Demonstrate knowledge of temperature, heat, and heat transfer.
2. Identify the types and characteristics of contact forces (e.g., pushes and pulls, friction) and at-a-distance forces (e.g., magnetic, gravitational, electrostatic).
3. Apply knowledge of light and optics to practical applications (i.e., reflection, refraction, diffusion).
4. Apply knowledge of electrical currents, circuits, conductors, insulators, and static electricity to real-world situations.
5. Distinguish between different types of energy (e.g., chemical, electrical, mechanical, electromagnetic, heat, light, sound, solar) and their characteristics as they apply to real-world situations.
6. Apply knowledge of the ability of energy to cause motion or create change.
7. Demonstrate knowledge that electrical energy can be transformed into heat, light, mechanical, and sound energy.
8. Demonstrate knowledge of potential and kinetic energy.
9. Demonstrate knowledge that motion of all matter can be changed by forces, observed, described, and measured.
10. Differentiate between balanced and unbalanced forces and how they affect objects.

23 Knowledge of Earth and space

1. Identify characteristics of geologic formations (e.g., volcanoes, canyons, mountains) and the mechanisms by which they are changed (e.g., physical and chemical weathering, erosion, plate tectonics).
2. Identify the characteristics of soil and the process of soil formation.
3. Identify the major groups and properties of rocks and minerals, examples of each, and the processes of their formation.
4. Identify ways in which land, air, and water interact (e.g., soil absorption, runoff, water cycle, atmospheric conditions, weather patterns).
5. Differentiate between radiation, conduction, and convection, the three mechanisms by which heat is transferred through Earth's system.
6. Identify the components of Earth's solar system and compare their individual characteristics.
7. Demonstrate knowledge of Earth's place in our changing universe (e.g., history and purposes of space exploration, vastness of space).
8. Demonstrate knowledge of the phases of the Moon and the Moon's effect on Earth.
9. Identify Earth's tilt and orbital pattern and how they determine the seasons.
10. Analyze various conservation methods and their effectiveness in relation to renewable and nonrenewable natural resources.
11. Identify the sun as a star and its effect on Earth (e.g., radiant energy, heat, light).

24 Knowledge of life science

1. Compare and contrast living and nonliving things.
2. Distinguish between infectious agents (e.g., viruses, bacteria, fungi, parasites) and their effects on the human body.
3. Differentiate structures and functions of plant and animal cells.
4. Identify the major steps of plants' physiological processes of photosynthesis, transpiration, reproduction, and respiration.
5. Demonstrate knowledge of how plants respond to stimuli (e.g., heat, light, gravity).
6. Identify the structures and functions of organs and systems of both animals and humans.
7. Demonstrate knowledge of animals' physiological processes (e.g., respiration, reproduction, digestion, circulation).

8. Demonstrate knowledge of cell theory as the fundamental organizing principle of life on Earth.
9. Demonstrate knowledge of heredity, evolution, and natural selection.
10. Demonstrate knowledge of the interdependence of living things with each other and with their environment (e.g., food webs, pollution, hurricanes).

25 Knowledge of the nature of science

1. Demonstrate knowledge of basic science processes (e.g., observing, classifying, communicating, qualifying, inferring, predicting).
2. Apply knowledge of scientific inquiry (e.g., forming hypotheses, manipulating variables, recording and interpreting data) to learning science concepts.
3. Identify the appropriate laboratory equipment for specific activities.
4. Identify state safety procedures for teaching science, including the care of living organisms and the accepted procedures for the safe preparation, use, storage, and disposal of chemicals and other materials.
5. Demonstrate knowledge of basic scientific vocabulary (e.g., theory, law, hypotheses, models).

26 Knowledge of the relationship of science and technology

1. Identify the interrelationship of science and technology.
2. Identify the tools and techniques of science and technology used for data collection and problem solving.
3. Identify ways in which technology can be used by students to represent understanding of science concepts.

27 Knowledge of instruction and assessment

1. Identify a variety of appropriate instructional strategies (e.g., cooperative learning, inquiry learning, investigations) for teaching specific topics.
2. Select manipulatives, physical models, and other classroom teaching tools for teaching specific topics.
3. Identify a variety of methods for assessing scientific knowledge, including analyzing student thinking processes to determine strengths and weaknesses.

Elementary Education K–6 Mathematics

Assessment of these competencies and skills will use real-world problems when feasible.

28 Knowledge of numbers and operations

1. Associate multiple representations of numbers using word names, standard numerals, and pictorial models for real numbers (e.g., whole numbers, decimals, fractions, integers).
2. Compare the relative size of integers, fractions, decimals, numbers expressed as percents, and numbers with exponents.
3. Apply ratios, proportions, and percents in real-world situations.
4. Represent numbers in a variety of equivalent forms, including whole numbers, integers, fractions, decimals, percents, and exponents.
5. Perform operations on rational numbers (e.g., whole numbers, fractions, decimals, integers) using multiple representations and algorithms and understand the relationships between these operations (i.e., addition, subtraction, multiplication, and division).
6. Select the appropriate operation(s) to solve problems involving ratios and percents and the addition, subtraction, multiplication, and division of rational numbers.
7. Use estimation in problem-solving situations.
8. Apply number theory concepts (e.g., primes, composites, multiples, factors, number sequences, number properties, rules of divisibility).
9. Apply the order of operations.

29 Knowledge of geometry and measurement

1. Analyze properties of two-dimensional shapes (e.g., area, sides, angles).
2. Apply geometric properties and relationships to solve problems (e.g., circumference, perimeter, area, volume) using appropriate strategies and formulas.
3. Apply the geometric concepts of symmetry, congruency, similarity, and transformations.
4. Identify and locate ordered pairs in a rectangular coordinate system.
5. Analyze properties of three-dimensional shapes (e.g., volume, faces, edges, vertices).
6. Compose and decompose two-dimensional and three-dimensional geometric shapes.
7. Determine how a change in length, width, height, or radius affects perimeter, circumference, area, surface area, or volume.

8. Within a given system (i.e., metric or customary), solve real-world problems involving measurement with both direct and indirect measures and make conversions to a larger or smaller unit.
9. Solve real-world problems involving estimates and exact measurements.
10. Select appropriate measurement units to solve problems.
11. Identify three-dimensional objects from two-dimensional representations of objects and vice versa.

30 Knowledge of algebra

1. Extend and generalize patterns or functional relationships.
2. Interpret, compare, and translate multiple representations of patterns and relationships by using tables, graphs, equations, expressions, and verbal descriptions.
3. Select a representation of an algebraic expression, equation, or inequality that applies to a real-world situation.
4. Demonstrate knowledge of one- and two-step linear equations and inequalities.
5. Apply the commutative, associative, and distributive properties to show that two expressions are equivalent.

31 Knowledge of data analysis

1. Demonstrate knowledge of the concepts of variability (i.e., range) and central tendency (i.e., mean, median, mode).
2. Use data to construct and analyze frequency tables and graphs (e.g., bar graphs, pictographs, line graphs).
3. Make accurate predictions and draw conclusions from data.

32 Knowledge of instruction and assessment

1. Identify a variety of appropriate instructional strategies (e.g., cooperative learning, peer tutoring, think alouds) for teaching specific concepts.
2. Identify ways that manipulatives, mathematical and physical models, and technology can be used in instruction.
3. Identify a variety of methods for assessing mathematical knowledge, including analyzing student thinking processes to determine strengths and weaknesses.